

2-29 IN REGT
Fort Benning, GA 31905
11 APR 12

SMALL UNMANNED AIRCRAFT SYSTEM (RQ-11 B, RAVEN) MASTER TRAINER COURSE (600-F20) MTT OPORD

References :

TM 1-1550-695-13&P; Operator and Field Maintenance Manual for Small Unmanned Aircraft System (SUAS) RQ-11B.

TC 1-611; Small Unmanned Aircraft System Air Crew Training Program manual

AR 95-23; Unmanned Aircraft System Flight Regulations

Time Zone Used Throughout the Order: Eastern Standard Time (EST) or Eastern Daylight Savings Time (EDT).

Task Organization: This course will require the use of four instructors per 12 students. Optimal class size is 8 Students and maximum class size is 12. Exceptions will not be made.

1. SITUATION : 2-29 IN, Fort Benning, GA provides Resident Courses and Mobile Training Teams (MTTs) to US Army units in both CONUS and OCONUS. Courses include: Anti-Armor Leader Course, Heavy Weapon Leader Course (HWLC), Sniper School, Modern Army Combatives Level I,II and III, Infantry Mortar Leaders Course (IMLC), and Small Unmanned Aircraft System (SUAS) Operator and Master Trainer Courses.

a. Higher Units Mission. 2nd Battalion, 29th Infantry trains Soldiers and Infantry Leaders, demonstrates Infantry capabilities, provides subject matter expertise, develops doctrine and supports the United States Army by providing Soldiers and Leaders prepared to fight and win.

2. MISSION: E/2-29 IN provides Mobile Training Teams (MTTs) to US Army Units, both CONUS and OCONUS in order To train selected soldiers on Air Crew Training Program Management, able to perform duties as a Battalion Raven Master Trainer.

3. EXECUTION

a. Concept of the Operation. The SUAS School presents a three week MTT package that teaches the Basic Raven Operator the duties of a Raven Master Trainer at a unit's home station resulting in the certification of 12 Master Trainers. This training includes 120 hours of instruction and evaluation on the Students' ability to execute classroom instruction and flight profiles. This course includes Incident Reporting Procedures, Fundamentals of Instruction, Semi-Annual Evaluations and information that will familiarize the Master Trainer and assist with the performance of the duties as unit Raven Master Trainer.

All MTTs provided by 2-29 are conducted in 5 phases:

PHASE 1: Units requests' training through FORSCOM / TRADOC accepts and builds

class in ATRRS.

PHASE 2: Initial unit/school coordination.

PHASE 3: School will conduct recon.

PHASE 4: School begins.

PHASE 5: Graduate, Recovery, and Reset.

(1) Maneuver.

PHASE 1: REQUEST MTT

Requesting Unit:

- i. Identifies need for training and submits request to FORSCOM for MTT

School:

- i. TRADOC receives request and builds course in ATRRS.
- ii. 2-29 IN receives from TRADOC official tasking to provide MTT.

PHASE 2: INITIAL COORDINATION

Requesting Unit:

- i. Before an MTT can be reserved a formal request must be submitted through the requesting unit's MACOM to HRC. HRC will send the request to TRADOC, who sends it to the United States Army Infantry Center G-3. The USAIC and the 29th Infantry Regiment will approve the request and task SUAS School to begin necessary coordination. The only initial coordination the U.S. Army SUAS School is authorized to conduct is providing an interested unit with the MOI and the contact information for United States Army Infantry Center G-3 and the 29th Infantry Regiment S-3.
- ii. 90 days out – U.S. Army SUAS School is notified by the 2d Battalion, 29th Infantry Regiment S-3 of tasking and is provided a POC for the requesting unit. The SUAS School establishes contact with the receiving unit POC and ensures the POC has received all of the support requirements.
- iii. 45 days out – a fund site established by receiving unit and MIPRs are received and approved.
- iv. 7 days out – final coordination with receiving unit.
- v. 2 days out – U.S. Army SUAS School cadre arrive at site and begin preparing for execution of MTT.
- vi. List information you need the requesting unit to provide the school

School:

- i. The SUAS School will provide cost estimates to the requesting unit as well as the standard name lines of the instructors.
- ii. The SUAS School will provide any informational assistance as required.

PHASE 3: RECON

Requesting Unit:

- i. Recon will normally be conducted two duty days prior to the beginning of the training. Requesting unit will arrange to accept the recon team and present to

- them all of the necessary equipment for inspection as well as give evidence that all training requirements (Range/Air space) have been reserved.
- ii. Coordinate with host range control authority and ensure that range briefings are coordinated and conducted. (If necessary)

School:

- i. The recon team will:
 - a. Inspect all requested equipment for completeness and serviceability. The requesting unit must ensure that they have the proper M2 cards and receivers for their aircraft.
 - b. Inspect class room area for suitability.
 - c. Insure that frequencies are deconflicted.
 - d. Insure that the necessary air space has been coordinated. Air space should be eight kilometers by eight kilometers.
 - e. Insure that launch and recover areas are adequate and available. Ideal launch and recovery area is 800 meters by 800 meters.
 - f. Assist the requesting unit with any information required.
 - g. Attend any range briefings as needed by host controlling authority.

PHASE 4: MTT CONDUCTS SCHOOL

Requesting Unit:

- i. Unit will conduct all communications actions as necessary to successfully run the range to include providing range safety officer or other duty position as required by the using unit's post procedures.
- ii. Requesting unit will be responsible for coordinating all necessary facilities. The facilities used to conduct the classroom portion of the course must have internet connectivity and Students must be able to log on with their CAC card.
- iii. Requesting unit will provide full time personnel to conduct all range actions. These personnel will not be a member of the class.
- iv. Requesting unit will provide qualified personnel to operate any equipment required to support the training. These personnel will not be a member of the class.
- v. Students must have a memorandum from the first O-5 in their chain of command stating that they will be serving in the capacity of Master Trainer.
- vi. Requesting unit must ensure that all Students have a Small Unmanned Aircraft System Manager (SUASMAN) account that can be verified and will provide the Instructors with a class roster when link up is conducted prior to the class start date. Application for enrollment may be obtained at the following web site:

<https://webapps.hurlburt.af.mil/SuasMgr/default.aspx>

Requesting unit must ensure that all Students arrive at the course prepared to train and ready to progress to the next level of Master Trainer. Due to the fact that there is no time built into the course Program of Instruction (POI) to bring Students up to speed/currency, day one of the course consists of a basic operator knowledge entrance exam that must be passed with a score of 70%, demonstrate their ability to assemble the aircraft, set up the Ground Control Station and

FalconView with RPUAV toolbar, and conduct pre-flight. Students will additionally demonstrate their ability to operate as both a Mission Operator and Vehicle Operator using the VAMPIRE simulator software on the RSTA laptop. In order to facilitate proper preparation, the most recent Operator Manual is posted on the SUAS website at:

<http://www.benning.army.mil/infantry/197th/229/SUASMO/>

School:

- i. The SUAS instructors will provide a three week (training will be conducted on Saturdays if needed for weather delays) course of instruction that will include classroom and hands on flight evaluations. See Attached training schedule.
- ii. The 2/29 IN Regt will provide enough instructors to complete the required training. A minimum of four instructors will be used to train 12 students. Units should plan on receiving 4 instructors per 12 man class.
- iii. 2/29 will provide all course materials for the class to include student handouts and slide presentations. Some of these course materials may need to be reproduced at the unit so that enough are on hand for the completion of the course.
- iv. Course schedule is attached. The course schedule is highly adaptable and can be changed to suit training needs, however once the course has started Students are under the responsibility of the Instructors pertaining to daily start times and end times. While scheduling courses, allowance should be made to accommodate for inclement weather. (The RAVEN B/DDI cannot be operated in inclement weather). Instructors will complete a days training and then proceed into the next days training when possible. This will allow for the successful completion of the course should unforeseen incidents occur.

PHASE 5: GRADUATION AND RESET

Requesting Unit:

- i. Requesting unit will provide a suitable location to allow for the issuance of course completion certificates.
- ii. Requesting unit will provide assistance with electronic devices necessary for the production of Student flight identification cards as well as class completion certificates.
- iii. Requesting unit will be responsible for any and all recovery operations necessary to restore equipment and facilities into a "ready" status.
- iv. Requesting unit will insure that names of students are entered into ATRRS.

School:

- i. Will assist where possible in entering all student names into ATRRS. The SUAS School will make adjustments.
- ii. Instructors may assist in insuring that all equipment is properly inventoried and stored in its storage containers.

4. SERVICE SUPPORT.

a. General. N/A

b. Materials and Services.

(1) Supply.

Class I: Requesting Unit will be responsible for providing all rations needed for all students in the class.

Class II:

- i. Requesting Unit will be responsible for providing all equipment necessary to conduct the course.
- ii. Requesting Unit will be responsible for the secure storage of all equipment during training.
- iii. All equipment used will be that of the requestor, not the SUAS School. The requesting unit

Class III: No Petroleum, oils, and lubricants required.

Class IV: No Construction materials needed

Class V: No Ammunition needed.

Class VI: No Personal demand items needed.

Class VII:

- i. Requesting unit will provide one complete RAVEN B/DDL system per 4 students trained with suitable spares on hand as necessary. Keep in mind that operators that do not get to fly often tend to cause some damage to the actual air vehicle during training
- ii. Requesting unit will coordinate with Brigade S-4 to receive M2 transceiver module cards and M2 RF Antennae for CONUS Raven UAV flight operations.
- iii. Provisions will be made to allow for the ability to re-charge air vehicle and Ground Control Station (GCS) batteries on site. A small generator per site is ideal.
- iv. Provision will be made to re-charge air vehicle and GCS batteries over night or in such a manner as to allow for a sufficient number to be available for the days training.
- v. Requesting Unit will provide one Reconnaissance, Surveillance, and Target Acquisition (RSTA) kit per site. 2/29 Personnel will NOT provide any RAVEN systems for training. All units will train on their own equipment.
- vi. Requesting Unit will provide two One Station Remote Viewing Terminal (OSRVT) systems per Master Trainer class. Should this equipment not be available, the requesting unit shall notify the school 45 days in advance to allow for the reservation and shipping of necessary equipment.

Class VIII: All medical emergencies will follow the requesting Units SOP. Requesting unit will facilitate any actions necessary should a medical emergency arise with any instructor.

Class IX: Requesting unit will have on hand all spare/repair parts as issued with each Raven system as well as listed in the system technical manual.

Class X: None

(2) Transportation.

- i. Requesting unit will be responsible for the transportation of students, equipment, and possibly instructors, to and from the training site each day
- ii. Requesting unit will fund one (or more) rental vehicles for instructor transportation. This vehicle will be a 4 wheel drive SUV type vehicle to facilitate the transportation of equipment and other items as needed.

(3) Services.

- i. The Requesting Unit will be responsible for coordinating for ALL necessary facilities to include:
 - a. Range:
 - i. Requesting Unit will be required to conduct all range coordination with their respective Range Control Division for all ranges and any requirements necessary to operate those ranges.
 - ii. Range “ground area” should be no smaller than 400 meters by 400 meters per site. One site is used to train 6 soldiers (full class size is 12 students or two sites).
 - iii. More training sites can be obtained given the number of students to be trained, the area available to train, and the number of instructors available to train.
 - iv. If two sites are needed, range area should be no smaller 800 by 800 meters. Ground control stations can be no closer than 400 meters to prevent frequency “bleed over”.
 - v. Unit will conduct all coordination with their post airspace control agency to obtain an area no smaller than 4 km by 4 km square for one site or 8 km by 8 km for two sites.
 - vi. Instructors will not begin course until all airspace management actions are taken in accordance with using unit’s air space controlling authority.
 - vii. Unit will conduct all communications actions as necessary to successfully run the range to include providing range safety officer or other duty position as required by the using unit’s post procedures.
 - viii. Requesting Unit will provide full time personnel to handle all range communications with range control should this be needed. This person should NOT be a member of the class to prevent any training distracters to the student.
 - ix. 2/29 personnel will not be held accountable for any deficiencies in range space or air space coordination.
 - x. Requesting Unit will ensure that all range personnel remain on site until the completion of training.
 - b. Classroom: Requesting Unit will coordinate for two class rooms large enough to accommodate a class of at least 12 students. (Normal class size).
 - i. Both class rooms will be set up with “one eye” capabilities, dry erase boards, and markers provided by the Requesting Unit.

- ii. One class room must have internet connectivity for all students and must be able to log on with CAC card. All computers must be able to log on to the SUASMAN web site. The requesting unit's installation education center / distance learning center prove ideal.
- c. Frequency Deconfliction: Requesting Unit will be responsible for insuring that there are absolutely no conflicts with the frequencies used by the RAVEN B/DDDL UAV. Frequency conflicts will result in the loss of air vehicles. Prior coordination should be made with other units on post to insure that no other RAVEN B/DDDL is flown at the same time or in proximity of the unit's systems.
- d. Funding:
 - i. All funds required for instructor travel and billeting should be placed in a MIPR for civilian contract employees and a Line of Accounting (LOA) for Military instructors. We will send a mixture of civilian contractors and active duty personnel.
 - ii. The SUAS School will NOT deploy to any location (CONUS) without funding in place a minimum of 45 days from start date of training. Most mobile training teams will include contract civilians which require funding well in advance of training
- e. Administrative: The SUAS training team will need assistance from the Requesting Unit for the following:
 - i. Requesting unit will provide access to a high quality printer for the production of course certificates and operator certification cards.
 - ii. Requesting unit will provide access to lamination equipment to facilitate the lamination of operator certification cards.
 - iii. Requesting unit will provide access to a photo copier as needed for the reproduction of limited course materials.
 - iv. Should any school owned equipment be needed for the training, the unit will assist and provide for return shipping of that equipment to Ft. Benning

(4) Maintenance.

- a. Requesting unit will be responsible for any maintenance issues that may arise according to their internal procedures. Units should have consumable spare parts on hand in accordance with the system TM.
- b. Requesting unit will be responsible for reporting all incidents IAW post policy and regulations should they occur. 2/29 staff can assist in this if necessary but will not be held accountable for reporting requirements.

(5) Medical Evacuation. Any medical emergencies will be handled in accordance with the requesting unit's internal SOP. Should instructors need medical attention, the School will be notified immediately. Requesting unit will provide one Combat Lifesaver qualified soldier or as required by unit's garrison and internal SOP.

5. COMMAND AND SIGNAL

a. Command

- i. BN S3: MAJ Lowe (706) 545-8517
- ii. Company Commander: CPT Chartier, (706) 545-8598
- iii. The unit is responsible for obtaining official tasking through their operations chain of command. The SUAS School cannot make any plans or conduct any type of training without official tasking through TRADOC.

- b. Informal coordination directly with the SUAS School should begin as soon as possible. While this coordination is extremely important, the school cannot mobilize without funding and a tasking regardless of the amount of informal coordination that has been conducted

b. Signal. SUAS School Contact:

- (1) SUAS Master Trainer: SSG Peek, (706)-545-1642; or
william.p.peek.mil@mail.mil.
- (2) Funding Contacts:
LOA for Soldiers: SSG Kulp; 2-29 IN TDY NCO; (706) 545-5929 or
patrick.s.kulp.mil@mail.mil.
MIPR for Civilian Contractors: Mrs. Venable; (706)-545-4496 or
melody.l.venable.civ@mail.mil

ACKNOWLEDGE:

**COMMANDER
LTC MILLER**

OFFICIAL

**OPERATIONS/TRAINING OFFICER
S3**

ATTACHMENTS:

**ANNEX A – COURSE PRE-REQUISITES/GRADUATION REQUIREMENTS
ANNEX B – TRAINING SCHEDULE**

**ANNEX A – COURSE PRE-REQUISITES/ GRADUATION REQUIRMENTS
SMALL UNMANNED AIRCRAFT SYSTEM (RQ-11 B, RAVEN) MASTER TRAINER
COURSE (600-F20) MTT OPORD**

1. Pre-Requisites:

- a Soldiers must be certified Raven B or DDL operators and must have in their possession on the first day of class their current Raven UAV Operators card. No student will be allowed to attend the Master Trainer course without a legitimate operator's card.
- b Soldiers must have proof of a minimum of 20 flight hours with the Raven B or DDL system. Proof can be in the form of log books or letter from the first O5 in the chain of command stating that the soldier has at least 20 flight hours.
- c Students must provide a copy of additional duty orders assigning them to the duties of unit Master Trainer for the RAVEN UAV. Orders must be signed by the first O5 in the chain of command.
- d Soldiers should be operationally experienced individuals, with unit retainability, who are expected to perform SUAV Master Trainer duties. Recommend (but not required) that Soldier is at least an E6. Soldiers in the rank of E4 and below will not be permitted to enter the course.
- e Soldiers will not be on a profile or have any physical limitations that would prohibit the operation of the system.
- f Soldiers must provide documented proof of eye vision correctable to 20/20 and can see red/green in both eyes.
- g Soldiers must have a minimum GT score of 100 and be able to provide a copy of their Enlisted Records Brief (ERB) or Officer Records Brief (ORB).
- h Soldiers must have at least two years retain ability left on their contract as of the start date of the course.
- i Individuals who do not meet these general basic prerequisites should not be sent to this course as they will not be allowed to attend training.

2. Graduation Requirements:

- a Students will be required to receive a "GO" on all portions of all written exams and hands on evaluations.
- b Students must receive an over-all "go" on all portions of two flight checklists.
- c Students must demonstrate, at all times, adequate "situational awareness". This is demonstrated by rapid response to the instructor's comments, commands, and questions. When the instructor gives instructions, and the Student cannot immediately follow those instructions, then there is a very high possibility that the Student could be dropped from the course.
- d Consumption of alcohol 12 hours before UAV operations is prohibited (IAW AR 95-23) and will cause immediate dismissal from the course
- e Students will be evaluated on their ability to evaluate and train other students.

3. Students will not be on profile or have any physical limitations.

4. Individuals who do not meet these general basic prerequisites (staff/support personnel not expected to perform operationally, individual near retirement/PCS,

junior/inexperienced personnel, etc.) should not be sent to this course, as they will not be allowed to attend training.

ANNEX B – SAMPLE TRAINING SCHEDULE

**SMALL UNMANNED AIRCRAFT SYSTEM (RQ-11 B, RAVEN) MASTER TRAINER
COURSE (600-F20) MTT OPORD**

Monday	Tuesday	Wednesday	Thursday	Friday
Day 1 Check paperwork Entrance exam Hands on evaluation In-processing Course Introduction	Day 2 Fundamentals of Instruction ATP Overview Incident Reporting/ DA FORM 2397 Risk Management/ Safety Emergency Procedures Airspace Management Assign Student Led Instruction for Days 4 & 5 (Homework 1)	Day 3 SUASMAN Flight Simulator/Vampire RPUAV Toolbar for Falconview Advance Maintenance/ Troubleshooting Mission Planning/Crew Mission Brief	Day 4 Student Led Instruction (Homework 1) Operate Range and Bearing Tool Assembly/Disassembly Pre/post flight Basic/Advanced Flight Mission Planning/Crew Mission Brief Night Ops/Mobile Ops Mapping and GPS Untrained Assistant	Day 5 Student Led Instruction (Homework 1) Flight Profile 1-1 (Heads Up/Heads Down) Course Review (Prep for Test 1)
Day 6 Test 1 Profile 1-1 (Heads Up / Heads Down)	Day 7 Test 1 RETEST Profile 2-1 (Waypoint Reroute/ Target Acquisition)	Day 8 Student Led Instruction (Homework 2 & 3) (Controls & Indicators / FalconView)	Day 9 Student Led Instruction (Homework 2 & 3) (Controls & Indicators / FalconView)	Day 10 Student Led Instruction (Homework 2 & 3) (Controls & Indicators / FalconView)
Day 11 OSRVT class Master Trainer Flight Profile 2	Day 12 OSRVT PE Flight Profile 2-2(Basic Mission)	Day 13 OSRVT PE ATP Flight Profile Course Review (Prep for Final Exam)	Day 14 Final Exam ATP Profile SUASMAN Update	Day 15 Final Exam RETEST Out processing / Course Critique Graduation